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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/274,194	03/22/1999	JOHN E. LANG	LAM2P266	8105

7590 02/17/2004

MARTINE & PENILLA, LLP
710 Lakeway Drive
Suite 170
Sunnydale, CA 94085

EXAMINER	
SONG, MATTHEW J	

ART UNIT	PAPER NUMBER
1765	

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action	Application No.	Applicant(s)	
	09/274,194	LANG, JOHN E.	
	Examiner	Art Unit	
	Matthew J Song	1765	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 27 January 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

a) ☒ The period for reply expires 4 months from the mailing date of the final rejection.

b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.

2. ☐ The proposed amendment(s) will not be entered because:

   (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);

   (b) ☐ they raise the issue of new matter (see Note below);

   (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

   (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____.

3. ☐ Applicant's reply has overcome the following rejection(s): _____.

4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

5. ☒ The a)☐ affidavit, b)☐ exhibit, or c)☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: *see continuation sheet*.

6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.

7. ☒ For purposes of Appeal, the proposed amendment(s) a)☐ will not be entered or b)☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

   The status of the claim(s) is (or will be) as follows:

   Claim(s) allowed: _____.

   Claim(s) objected to: _____.

   Claim(s) rejected: *20-38*.

   Claim(s) withdrawn from consideration: _____.

8. ☐ The drawing correction filed on _____ is a)☐ approved or b)☐ disapproved by the Examiner.

9. ☐ Note the attached Information Disclosure Statement(s)(PTO-1449) Paper No(s). _____.

10. ☐ Other: _____

NADINE G. NORTON
SUPERVISORY PATENT EXAMINER

Response to Arguments

Applicant's arguments filed 1/27/2004 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine the references (pg 6), the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the Tobben teaches a process of removing a photoresist using oxygen plasma (col 3, ln 55-65) and Chen et al teaches a process of removing photoresist using oxygen plasma or dimethyl sulfoxide (col 4, ln 25-35), which is a teaching of equivalence. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Tobben with Chen et al's method of removing photoresist using dimethyl sulfoxide because substitution of known equivalents for the same purpose is held to be obvious (MPEP 2144.06).

In response to applicant's arguments against the references individually (pg 10), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Chen et al is not relied upon to teach the limitation of using a hard mask or removing photoresist from over a hard mask. Chen et al is relied upon solely as teaching a general method of removing photoresist using oxygen

plasma or dimethyl sulfoxide. The feature of removing photoresist over a hard mask is taught by Tobben.

In response to applicant's argument that the references fail to show certain features of applicant's invention (pg 7), it is noted that the features upon which applicant relies (i.e., the photoresist is removed from over the hard mask layer that has an opening extending through the entire width of the hard mask layer down to the upper surface of the low constant dielectric layer) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's argument that the references fail to show certain features of applicant's invention (pg 7), it is noted that the features upon which applicant relies (i.e., forming an opening in the hard mask layer such that the low dielectric layer is exposed) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., forming openings in the hard mask layer such that the low dielectric layer is exposed **then** the remaining photoresist is removed (pg7)) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant's argument that Tobben does not teach forming an opening in a hard mask layer is noted but is not found persuasive. Tobben teaches openings **20a** extend the full height of the mask layer to expose the top of the IMD layer, this reads on applicant's low dielectric layer, note Fig 5 and column 4, lines 14-25. Therefore, the limitation of forming opening in the hard mask layer to such that the low dielectric layer is exposed is taught by Tobben.

In response to applicant's argument that the effect of DS on the hard mask has not been addressed in Chen or Tobben, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Applicant's argument that DS is unsatisfactory for removing photoresist is noted (pg 8) but is not found persuasive. Chen et al teaches removing photoresist using DS or oxygen-containing plasma (col 4, ln 20-40). Therefore, the photoresist is capable of being removed using DS, as taught by Chen et al.